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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/917,854   | 07/31/2001  | Kunihiro Tsubosaki   | DAIN: 644           | 2156             |
| 7590   | 01/22/2004  |                      | EXAMINER            |                  |
| PARKHURST & WENDEL, L.L.P.<br>1421 Prince Street, Suite 210<br>Alexandria, VA 22314-2805 |             |                      | ERDEM, FAZLI        |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 2826                |                  |

DATE MAILED: 01/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                 |                     |  |
|------------------------------|-----------------|---------------------|--|
| <b>Office Action Summary</b> | Application No. | Applicant(s)        |  |
|                              | 09/917,854      | TSUBOSAKI, KUNIHIRO |  |
| Examiner                     | Art Unit        |                     |  |
| Fazli Erdem                  | 2826            |                     |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 20 October 2003.  
 2a) This action is FINAL.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-15 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) 7-15 is/are allowed.  
 6) Claim(s) 1-6 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
 a) The translation of the foreign language provisional application has been received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

1) Notice of References Cited (PTO-892)                            4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)                    5) Notice of Informal Patent Application (PTO-152)  
 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.                    6) Other:

## DETAILED ACTION

### *Allowable Subject Matter*

1. Claims 7-15 allowed.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6 rejected under 35 U.S.C. 103(a) as being unpatentable over Miyamoto et al. (6,492,719) in view of Hung et al. (6,430,059) further in view of Kobayashi et al. (6,198,169) further in view of Iizuka (6,472,745).

Regarding Claims 1-6 Miyamoto et al. disclose a semiconductor device where a plurality of tape carriers are multilayered in upward and downward directions. In the stacked packages, one ends of leads formed over the whole surfaces of each tape carrier are electrically connected to their corresponding connecting terminal of the semiconductor chip. Other ends of the leads are electrically connected to their corresponding through-holes defined in the tape carrier.

Connecting terminals common to the plurality of semiconductor chips are formed at the same places of the plurality of tape carriers and withdrawn to the same external connecting terminals through a plurality of mutually-penetrated through-holes. Miyamoto et al. fail to disclose the connection member, connection member in the specified configuration and required wire bumps. However, Hung et al. disclose an integrated circuit package substrate integrating with decoupling capacitor where the required connection member is disclosed. Furthermore, Kobayashi et al.

disclose a semiconductor device and process for producing the same where the required connection member in the required configuration is disclose. Finally, Iizuka disclose a semiconductor device where the required wire bump is disclosed.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the required connecting structure, required connecting structure in the required configuration, and the required wire bumps as taught by Hung et al., Kobayashi et al and Iizuka, respectively in order to have a semiconductor structure with better performance and ease of manufacturability.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fazli Erdem whose telephone number is (703) 305-3868. The examiner can normally be reached on M - F 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (703) 308-6601. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Starting February 4, 2004, Examiner Fazli Erdem's phone number will be changed to (571) 272-1914 and his SPE Nathan Flynn's phone number will be changed to (571) 272-1915

Application/Control Number: 09/917,854  
Art Unit: 2826

FE  
January 11, 2004



Michael J. Givens  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2660